CLAIM LISTING

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (**currently amended**) A membrane electrolyte for a fuel cell comprising a first material for conducting protons from an anode chamber of a fuel cell to a cathode chamber of the fuel cell and a second material organized and arranged with respect to the first material ~~in one or more homogeneous fields in predetermined locations in the first material~~ for conducting carbon dioxide gas from the anode chamber to the cathode chamber, wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material.

2. Canceled.

3. Canceled.

4. Canceled.

5. Canceled.

6. Canceled.

7. (previously presented) The membrane electrolyte according to claim 1, wherein said first material comprises a hydrophilic polymer having characteristics comprising an affinity for water, a proton conducting capacity, and oxidation resistance.

8. (original) The membrane electrolyte according to claim 1, wherein said first material comprises perfluorosulfonic substituted polytetrafluorethylene.

9. Canceled.

10. (previously presented) The membrane electrolyte according to claim 1, wherein said first material comprises perfluorinated ionomer zirconium hydrogen phosphate.

11. (previously presented) The membrane electrolyte according to claim 1, wherein said first material comprises polyetheretherketone.

12. (original) The membrane electrolyte according to claim 1, wherein said first material comprises polybenzimidazole.

13. (previously presented) The membrane electrolyte according to claim 1, wherein said first material comprises PVDF.

14. Canceled.

15. (original) The membrane electrolyte according to claim 1, wherein said second material comprises expanded PTFE.

16. (previously presented) The membrane electrolyte according to claim 1; wherein said membrane is coated with a catalyst.

17. (previously presented) The membrane electrolyte according to claim 1; wherein said first material is coated with a catalyst.

18. (original) The membrane electrolyte according to claim 1, wherein said first and said second materials are combined to substantially form a single layer structure.

19. Canceled.

20. Canceled.

21. Canceled.

22. Canceled.

23. Canceled.

24. Canceled.

25. (**currently amended**) A membrane electrode assembly for a fuel cell system comprising:

a carbon dioxide gas-evolving, protonically conductive membrane electrolyte comprising a first material for conducting protons from an anode chamber of said fuel cell to a cathode chamber of said fuel cell and a second material organized and arranged with respect to ~~in one or more homogeneous fields in predetermined locations in~~ the first material for evolving carbon dioxide gas from the anode chamber to the cathode chamber, wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material;

a first catalyst positioned proximate said first side of said membrane electrolyte;

an anode gas diffusion layer positioned proximate said anode electrode;

a second catalyst positioned adjacent said second side of said membrane electrolyte; and

a cathode gas diffusion layer positioned proximate said cathode electrode.

26. (original) The membrane electrode assembly according to claim 25, wherein said anode gas diffusion layer and/or said cathode gas diffusion layer comprises porous carbon.

27. **(currently amended)** The membrane electrode assembly according to claim 26 ~~25~~, wherein said porous carbon comprises carbon fiber paper.

28. **(currently amended)** The membrane electrode assembly according to claim 26 ~~25~~, wherein said porous carbon comprises a carbon cloth.

29. (original) The membrane electrode assembly according to claim 25, wherein said anode gas diffusion layer and/or said cathode gas diffusion layer includes a thickness between approximately 150 μm to 400 μm.

30. (original) The membrane electrode assembly according to claim 25 ~~23~~, wherein said anode gas diffusion layer and/or said cathode gas diffusion layer is treated with an additive.

31. (previously presented) The membrane electrode assembly according to claim 30, wherein said additive comprises PTFE.

32. (original) The membrane electrode assembly according to claim 25, wherein each of said anode gas diffusion layer and said cathode gas diffusion layer includes channels for directing gas to/from said second material of said membrane.

33. **(currently amended)** A fuel cell comprising a membrane electrolyte comprising a first material for conducting protons from an anode chamber of said fuel cell to a cathode chamber of said fuel cell and a second material organized and arranged with respect to ~~in one or more homogeneous fields in predetermined locations in~~ the first material for conducting carbon dioxide gas from the anode chamber to the cathode chamber; wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material.

34. **(currently amended)** A fuel cell comprising a housing and a membrane electrode assembly disposed within said housing forming an anode chamber and a cathode

chamber, said membrane electrode assembly comprising:

a carbon dioxide gas-evolving, protonically conductive membrane electrolyte having a first material for conducting protons from said anode chamber to said cathode chamber and a second material organized and arranged with respect to ~~in one or more homogeneous fields in predetermined locations in~~ the first material for conducting carbon dioxide gas from the anode chamber to the cathode chamber; wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material;

a first catalyst positioned proximate said first side of said membrane electrolyte;

an anode gas diffusion material positioned proximate said anode electrode;

a second catalyst positioned adjacent said second side of said membrane electrolyte;

and

a cathode gas diffusion material positioned proximate said cathode electrode.

35. **(currently amended)** A fuel cell system comprising:

a fuel delivery device;

a fuel source having carbonaceous fuel, said source in communication with said fuel delivery device;

an anode chamber having an inlet for receiving a fuel mixture from

said fuel delivery device and an outlet for returning unreacted fuel to said fuel delivery device;

a cathode chamber having an inlet for allowing an oxidant to flow into said cathode chamber, a first outlet for exhausting gaseous effluent and a second outlet for directing water effluent to said fuel delivery device;

a membrane electrolyte positioned between said anode chamber and said cathode chamber, said membrane comprising a first material for conducting protons from said anode chamber to said cathode chamber and a second material organized and arranged with respect to ~~in one or more homogeneous fields in predetermined locations in~~ the first material for conducting carbon dioxide gas from said anode chamber to said cathode chamber; wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material.

36. (previously presented) The fuel cell system according to claim 34, further comprising a fuel source provided internal to the fuel cell system.

37. (previously presented) The fuel cell system according to claim 34, further comprising a fuel source is external to the fuel cell system.

38. (**currently amended**) A fuel cell system comprising:

a fuel delivery device;

a fuel source in communication with said fuel delivery device;

an anode chamber having an inlet for receiving a fuel mixture from said fuel delivery;

a cathode chamber having an inlet for allowing an oxidant to flow

into said cathode chamber and an outlet for exhausting effluent out of said cathode chamber;

a membrane electrolyte positioned between said anode chamber and said cathode chamber, said membrane comprising a first material for conducting protons from said anode chamber to said cathode chamber and a second material organized and arranged with respect to ~~in one or more homogeneous fields in predetermined locations in~~ said first material for conducting carbon dioxide gas from said anode chamber to said cathode chamber; wherein said second material comprises a web of micromesh, and wherein said first material comprises a plurality of strips positioned intermittently along said second material.

39. Canceled.

40. Canceled.